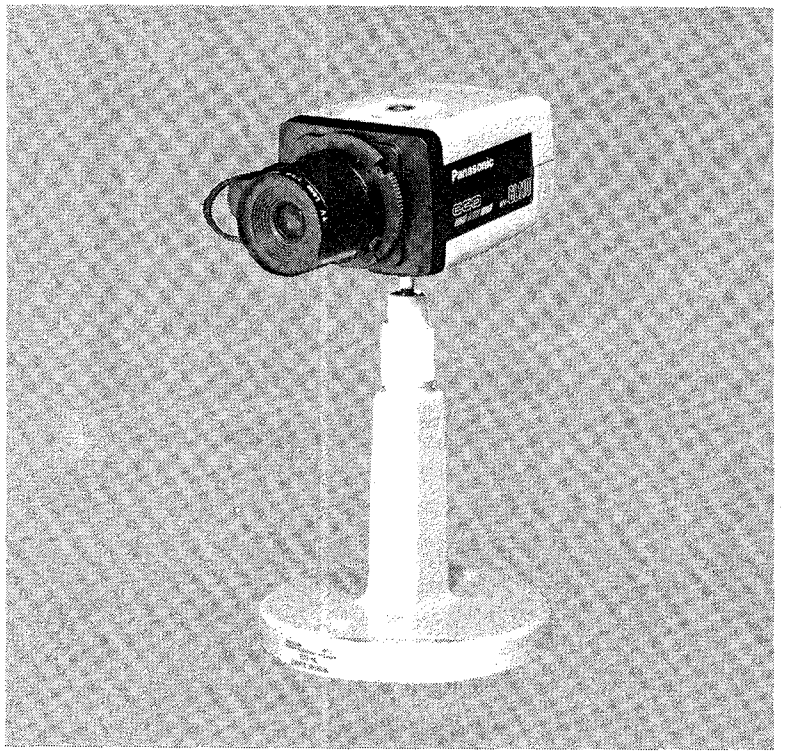
Colour CCTV Camera

WV-CL110

Operating Instructions



ENGLISH
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中文
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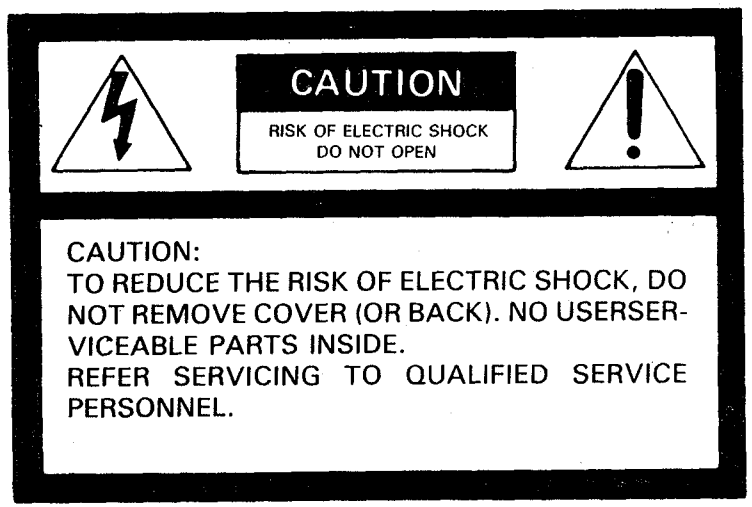
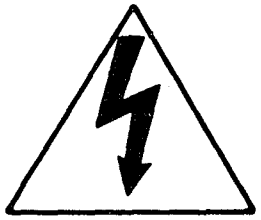
Panasonic

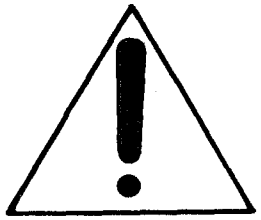
Before attempting to connect or operate this product, please read these instructions completely.

ENGLISH VERSION


CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION:
TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USERSERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

This model conforms to the EC directive (for radio interference) 82/499/EEC.

This apparatus was produced to BS 800:1983.

WARNING:
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

ENGLISH

CONTENTS

PREFACE 1
FEATURES 1
PRECAUTIONS 2
MAJOR OPERATING CONTROLS AND THEIR FUNCTIONS 3
INSTALLATIONS 7
CABLE/CONNECTOR INFORMATION 9
CONNECTIONS 10
LENSES 11
FLANGE-BACK OR FOCUS ADJUSTMENT 14
SPECIFICATIONS 15
OPTIONAL ACCESSORIES 16

The serial number of this product may be found on the bottom cover of the unit.
You should note the serial number of this unit in the space provided and retain this book as a permanent record of your purchase to aid identification in the event of theft.

Model No. WV-CL110

Serial No. _____

PREFACE

The Panasonic Colour Mini CCTV System consists of a Colour CCTV Camera and a Video Monitor with built-in sequential switcher.
The Colour CCTV Camera consists of a camera and camera mounting bracket.

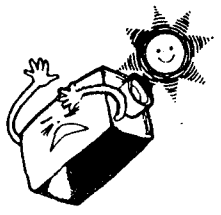
Just attach the mounting bracket to wall or ceiling, aim the camera and focus. A single coaxial cable is used for connection between the camera and monitor, and carries the video output to the camera and supplies the low voltage DC power and synchronizing vertical (V) drive pulse to the cameras. This economical Colour Mini CCTV System has been specially designed for the surveillance and security needs at offices, factories, stores, schools, hospitals, public and residential building, etc.

FEATURES

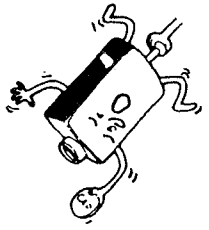
- 1/2-inch interline CCD image sensor with 512(H) x 582(V) pixels.
- 330 lines of horizontal resolution.
- 10 lux of minimum scene illumination at F1.4.
- Optional CS-mount (Special C-mount) lens can be used.
- Optional C-mount lens can be used together with optional Lens Mount Converter (C-mount adaptor) WV-AD20.
- Selectable automatic gain control (AGC) ON or OFF.
- Selectable Auto Iris Control signal for the lens either video or DC control signal.
- Selectable automatic tracing white balance (AUTO) for through the lens (TTL) type or automatic white balance control (LOCK).

PRECAUTIONS

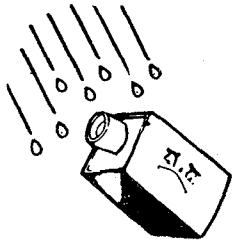
- Do not aim the camera toward the sun or other extremely bright objects, whether it is turned on or not.
  Do not aim the camera to record or monitor bright stationary scenes for prolonged periods of time.



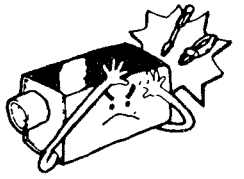
- Do not let the lens remain uncapped when the camera is not in use.



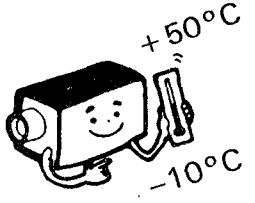
- Do not expose the camera to rain or moisture or try to operate it in wet areas. Do not operate the camera if it becomes wet.



- Do not attempt to disassemble the camera. In order to prevent electric shock, do not remove screws or covers.
  There are no user-serviceable parts inside.

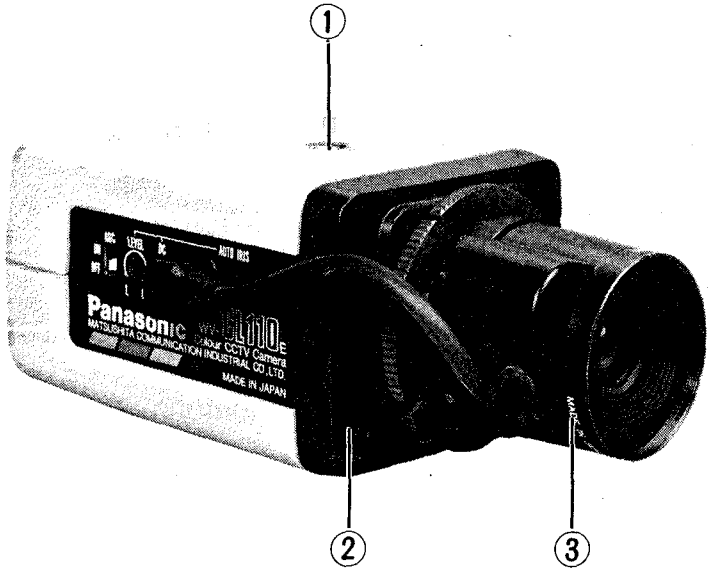


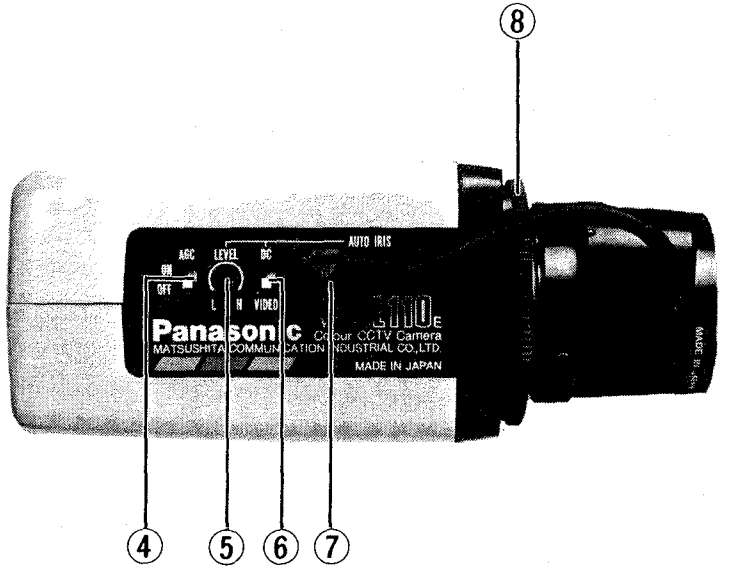
- Use the camera under conditions where temperature are within -10°C - +50°C and humidity is below 90%.

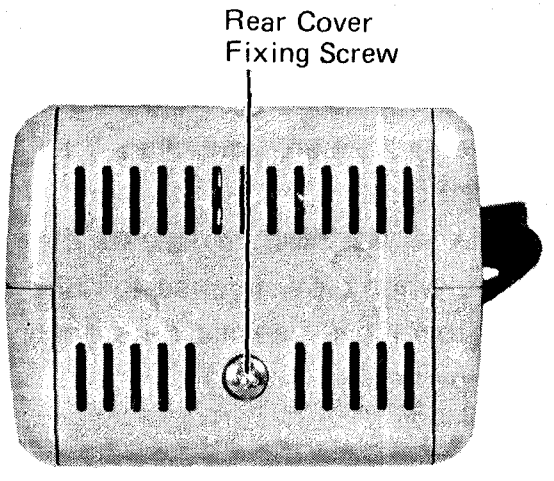


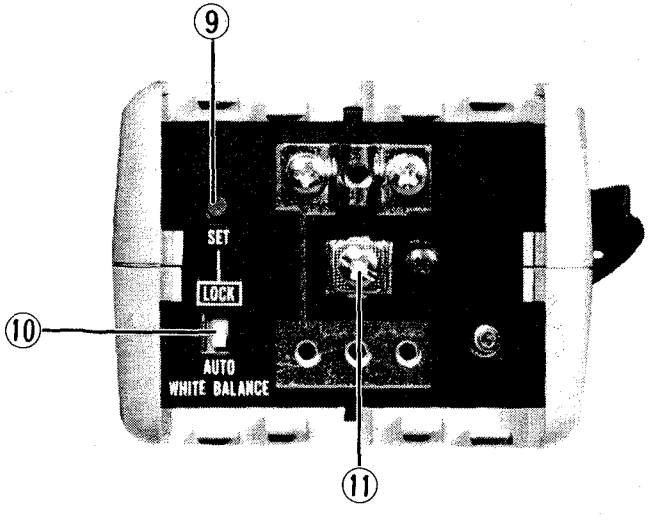
- Do not use strong or abrasive detergents when cleaning the camera body.
  Do use a dry cloth to clean the camera when dirty. In case the dirt is hard to remove, use mild detergent and wipe gently.

MAJOR OPERATING CONTROLS AND THEIR FUNCTIONS









1 **Camera Mounting Screw Hole**

These holes are one each on the top and bottom covers and are used to mount the camera onto a mounting bracket or tripod, and is threaded (1/4"-20).

2 **Power Indicator**

This lamp indicates that the camera is in operating condition.

3 **Lens (Option)**

This lens mount is special mount (CS-mount) type. An automatic iris lens of WV-LA2.8, WV-LA4.5, WV-LA6, WV-LA12, WV-LA18, WV-LA36 and WV-LZ81/6 can be used as optional accessory. Standard C-mount type of automatic iris lens can be used with this camera using with lens mount converter (C-mount adaptor) WV-AD20.

4 **AGC ON/OFF Switch (AGC, ON/OFF)**

This switch is used to select the gain of the video amplifier as follows;

ON:

When the lens iris is fully opened at low light shooting, a clear picture is obtained by automatic increase of the gain.

OFF:

A natural and low-noise picture is obtained at low light shooting.

Note:

Set this switch to OFF position for adjusting the Auto Iris Level Control (5) or Auto Iris Level Control on the Lens.

5 **Auto Iris Level Control**
(AUTO IRIS LEVEL, L(Low)/H(High))

This control adjusts the control level of the auto iris control when the Lens Selection Switch (6) is set to the DC position and the auto iris lens which requires the DC control voltage such as WV-LA12 etc., is mounted on the camera.

Note:

When the Lens Selection Switch (6) is set to VIDEO position, the auto iris control level should be adjusted by the lens.

Adjust this control while setting the AGC ON/OFF Switch (4) to "OFF" position.

6 Lens Selection Switch (AUTO IRIS, DC/VIDEO)

This switch is used to select the supplied auto iris control signal to the lens from the Auto Iris Lens Connector (7).

DC:

Choose this position when the auto iris control lens requiring DC control signal such as WV-LA2.8, WV-LA4.5, WV-LA6, WV-LA12, WV-LA18, WV-LA36, etc., is mounted on the camera.

VIDEO:

Choose this position when the auto iris control lens requiring video signal such as WV-LA8B, WV-LA16B, WV-LA25B, WV-LA50B, etc., together with Lens Mount Converter WV-AD20, is mounted on the camera.

7 Auto Iris Lens Connector

Supplies the power and either the video signal or DC control signal to the Auto Iris Lens.
The 4-pin connector for the lens which originally has different type of connector is a standard accessory (Part No. YFE4191J100) of optional Lens Mount Converter (C-mount adaptor) WV-AD20.

8 Flange-back Adjusting Ring

Use to adjust the backfocus or picture focus by rotating this ring.

CAUTION:

Mount the optional Lens Mount Converter (C-mount adaptor) WV-AD20 before mounting the optional C-mount lens to prevent damage of inner glass and CCD image sensor.

9 White Set Button (SET)

In case the White Balance Selection Switch (10) is set to LOCK position, the white balance can be set by pressing this button while aiming the camera at the white object.
The white balance setting is required whenever the lighting condition is changed.

Note:

It may not be proper to use the LOCK position in the following conditions.

- Under low illumination
- Under coloured illumination
- No white object is available

10 White Balance Selection Switch (WHITE BALANCE, AUTO/LOCK)

The white balance setting can be selected as;

AUTO:

The white balance can automatically be set by tracing the characteristic/colour temperature of light source.

Even if the characteristic/colour temperature of light source changes during the recording, the white balance will be kept properly.

Note:

1. It is recommended to use the AUTO position when the colour temperature of light would vary during shooting.
2. It is recommended to use the LOCK position in the following conditions.
   - Under fluorescent lamp
   - Colour temperature does not vary
   - More accurate white balance control is required.

LOCK:

The white balance can be set by pressing the White Set Button (SET)(9) while aiming the camera at the white object such as white wall or paper.

More accurate white balance can be achieved at this position. However, when the colour temperature of light source changes, the white balance must be reset by pressing the White Set Button (SET)(9) while aiming the camera at the white object.

11 Video Output Connector

Used to connect a coaxial cable connected to the CAMERA INPUT connector on the video monitor WV-CM110A or camera drive unit WV-PS10A or WV-PS104.

This connector (terminal) receives the DC power and vertical drive pulse for the camera and sends out the video signal of the camera to the video monitor or camera drive unit.

INSTALLATION

The mounting bracket can be fixed either on the upper cover or the lower cover of the camera.

- **Installation on the wall**

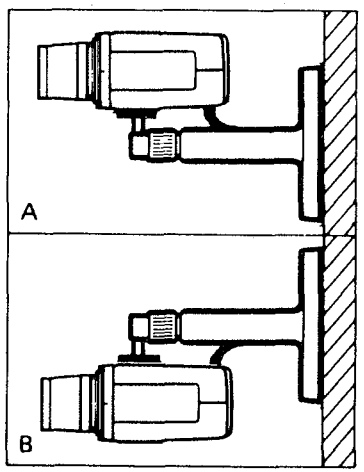


Fig. A, B

- **Installation on the ceiling**

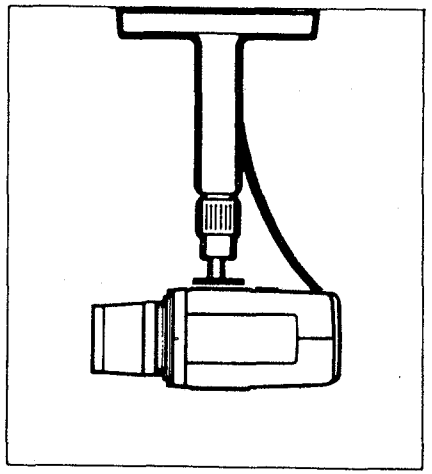


Fig. C

- **Installation on the shelf or stand**

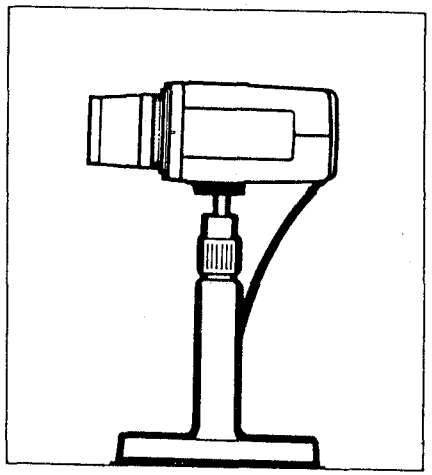


Fig. D

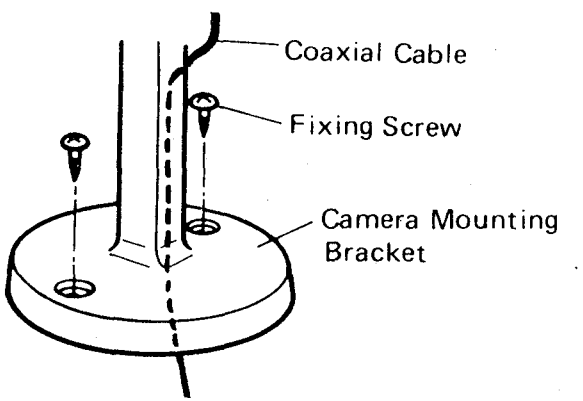
- **INSTALLATION PROCEDURE**

The explanation is for the Fig. A, however the same is applied for the Figs. B, C and D.

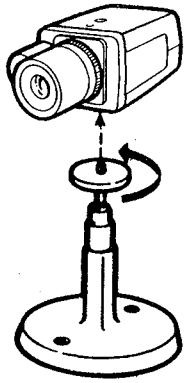
1. Install the camera mounting bracket to the wall with 2 screws.

   Note:

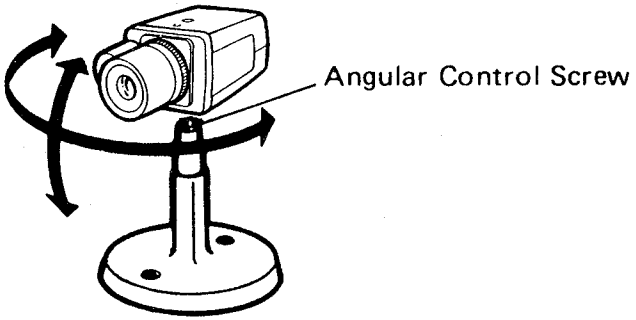
   Coaxial cable can be passed through the center hole of the camera mounting bracket.



2. Insert the camera fixing screw of the camera mounting bracket into the camera mounting hole and tighten the screw firmly.

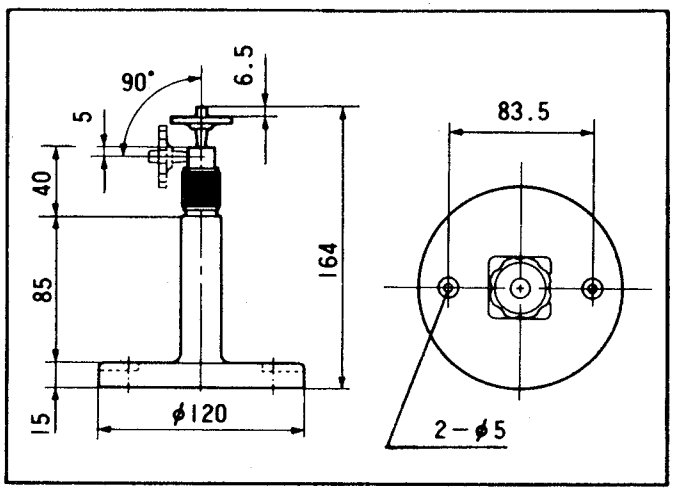


3. Connect the camera and monitor with the coaxial cable and turn ON the power switch of the monitor.
4. While viewing the monitor picture, loosen the angular control screw slightly and tighten the screw firmly.



5. While viewing the monitor picture, adjust the Auto Iris Adjustment, White Balance Adjustment and picture focus to obtain the proper picture.

DIMENSION OF CAMERA MOUNTING BRACKET



- **CAUTIONS ON INSTALLATION**

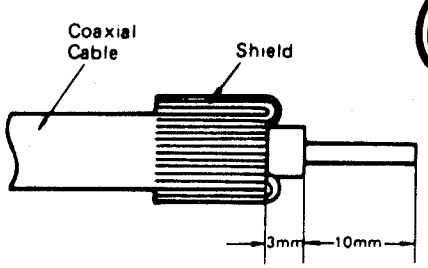
Use the wooden material for the installation site and use the wood screw to fix the camera.
For the installation onto the material other than wood, refer servicing to qualified service personnel.

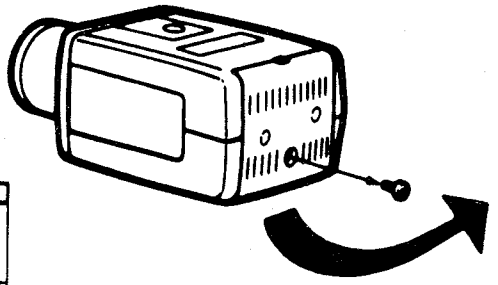
CABLE/CONNECTOR INFORMATIONS

These connections should be made by qualified service personnel or system installers.

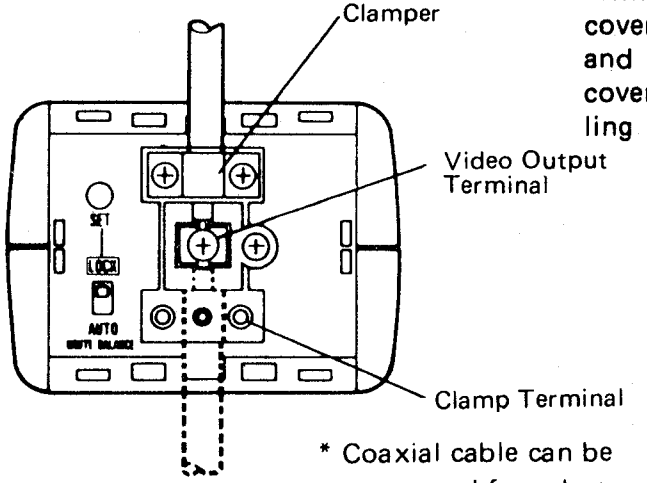
■ Coaxial Cable for Camera

The maximum cable thickness for this camera is RG-6/U type.



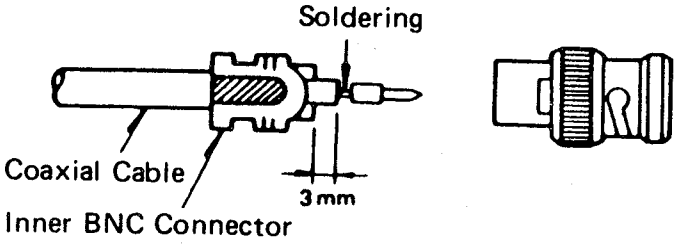


Remove the rear cover fixing screw and pull the rear cover out by pulling the bottom.

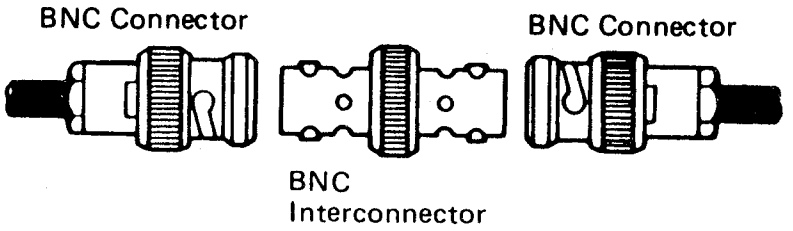


* Coaxial cable can be connected from bottom side.

■ Coaxial Cable/BNC Connector



■ Interconnection of BNC Coaxial Cable



CONNECTIONS

Caution:

1. Keep the Power Switch of the monitor, optional Camera Extension Unit and optional Camera Drive Unit in the OFF position during connection.
   If the power of these units are ON during connection, the camera will not function due to the protection circuit for misconnection.

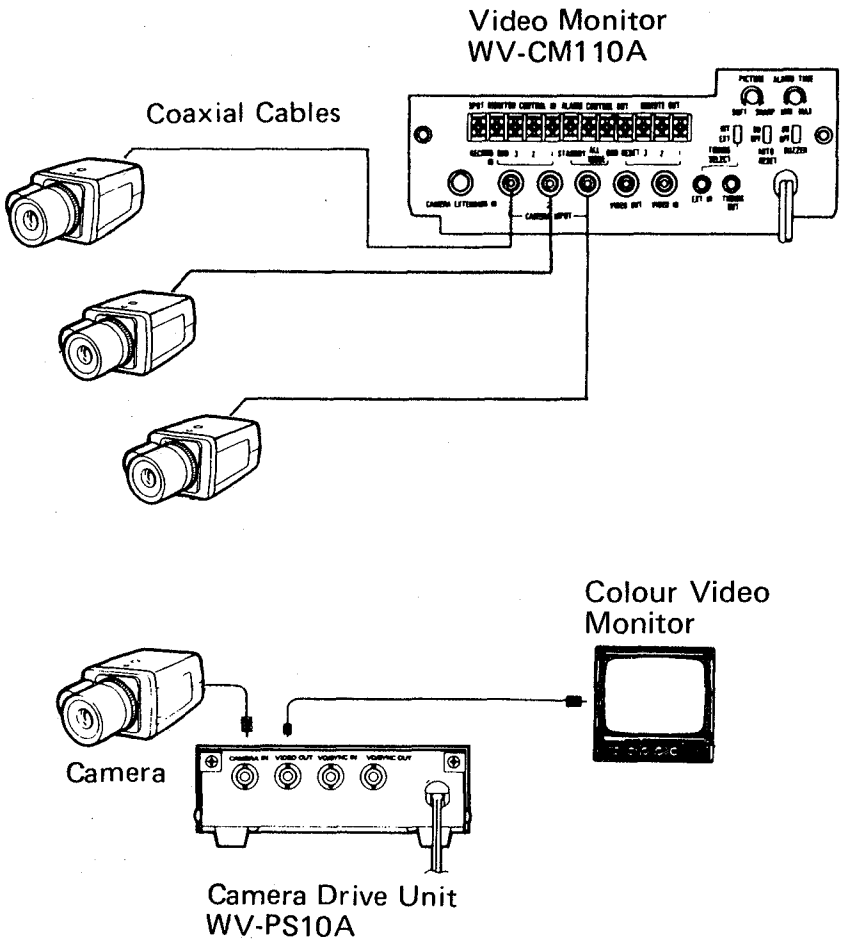
■ BASIC SYSTEM

- Connect the single coaxial cables between the cameras and monitor or Camera Drive Unit (CAMERA INPUT). The approx. maximum cable length is as;

Coaxial Cable Type	Maximum Cable Length	DC R/1000 ft. of Inner Conductor
RG-59/U	200 m	Less than 30 ohms
RG-6/U	500 m	Less than 12 ohms

The maximum DC resistance between the camera and monitor or camera drive unit is 20 ohms.

- **Connection Diagram**



LENSES

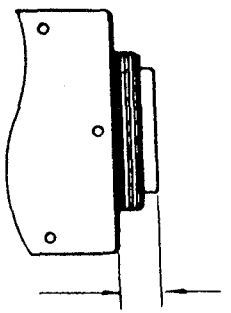
1. Selection of Lens

It is recommended to use the following Auto Iris Control Lens.

Models / Specifications		WV-LA2.8 (Wide)	WV-LA4.5 (Wide)	WV-LA6 (Wide)	WV-LA12 (Standard)	WV-LA18 (Telephoto)	WV-LA36 (Telephoto)	WV-LZ81/6 (Motorized Zoom)
Image Size		6.4 (H) x 4.8 (V) mm (equivalent to 1/2" pickup tube)						
Focal Length		2.8 mm	4.5 mm	6 mm	12 mm	18 mm	36 mm	8.5 – 51 mm (6X)
Maximum Aperture Ratio		1 : 1.4	1 : 1.4	1 : 1.4	1 : 1.4	1 : 1.4	1 : 1.8	1 : 1.2 (Wide)
								1 : 1.3 (Tele)
Angular Field of View	H	107°17'	70°1'	54°75'	29°	20°36'	10°13'	41°56'(Wide) 7°14'(Tele)
	V	88°4'	55°6'	42°45'	21°59'	15°22'	7°39'	31°19'(Wide) 5°28'(Tele)
Minimum Object Distance		Adjusted by camera	0.3m			0.27m	1m	
Mount		Special C-mount (CS-mount, 1" - 32UN)						
Optional Filter Size		None	ϕ37.5 mm P = 0.5mm					ϕ49 mm P = 0.75 mm
Dimensions		ϕ43x34mm	ϕ43 x 41 mm					85(W) x 62(H) x 99(D)mm
Weight		65g	75g	75g	65g	70g	80g	420g
Focus Control	Far	—						+6V DC Max. 24mA 4sec.
	Near	—						-6V DC Max. 24mA 4sec.
Zoom Control	Wide	—						+6V DC Max. 24mA 6sec.
	Tele	—						-6V DC Max. 24mA 6sec.
Iris Range		—						F1.2 – F22, Close

* Dimensions and weights indicated are approximate. * Specifications are subject to change without notice.

When you use the lens other than listed on page 11, lens mount should be C-mount or special C-mount (CS-mount (1"-32UN)) and lens weight should be less than 300g. If not, both the lens and camera should be secured.
The protrusion of the rear of the lens should be as shown below.



C-mount: Less than 8.6 mm

CS-mount: Less than 3.6 mm

CAUTION:

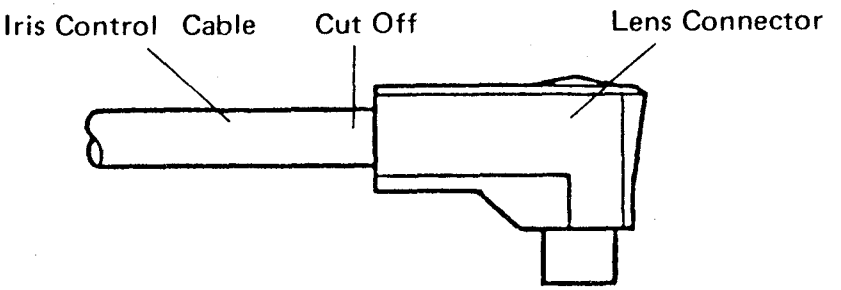
To use the C-mount lens, the Lens Mount Converter (C-mount adaptor) WV-AD20 should be used with the camera.

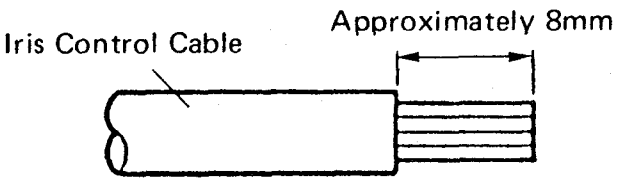
2. Installation of Auto Iris Lens Connector

When you use the Auto Iris Lens other than listed on page 11, install the lens connector (YFE4191J100) coming with the Lens Mount Converter (C-mount adaptor) WV-AD20 as follows.

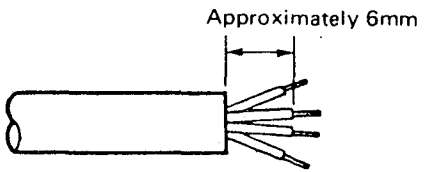
The following installation should be made by qualified service personnel or system installers.

(1) Cut off the iris control cable at the edge of lens connector and then cut off the outer cable cover as shown in the diagram.





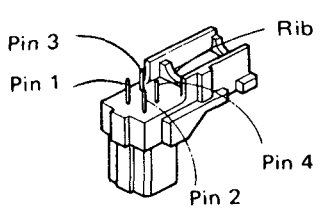
(2) Cut off the inner cable covers of the iris control cable as shown in the diagram.



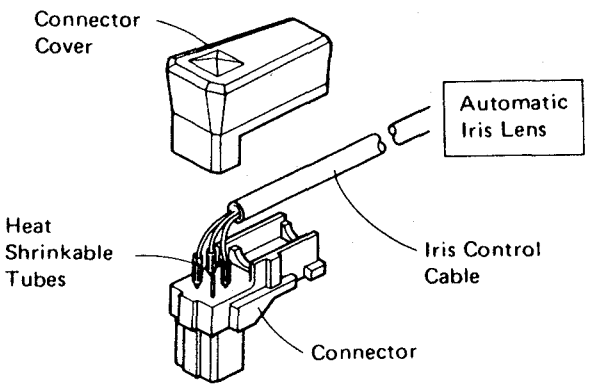
(3) Put the heat shrinkable tubes or equivalent tubes on the inner cables of the iris control cable.

(4) Solder the inner cables of the iris control cable at the pin-plug block according to the following pin assignment and cover the heat shrinkable tubes or equivalent tubes at soldered area and the heat on the tubes to shrink.

Pin 1: Power source; +9V DC, 35mA Max.
Pin 2: Not used
Pin 3: Video signal; 0.7Vp-p/40 kohms
Pin 4: Shield, ground
(When the Lens Selection Switch (6) is set to the VIDEO position)



(5) Both the connector cover and connector should be positioned to interlock.



Note:

Cut off the rib on the connector, when the iris control cable is thick and the connector cover and connector can not locked.

3. Mounting the Lens

CAUTION:

Always set the Flange-back Adjusting Ring to fully clockwise by loosing the screw on the ring before mounting the lens otherwise the inner glass and CCD image sensor could be damaged by the lens.

(1) Mount the lens by turning it clockwise onto the lens mount of the camera.

(2) Connect the lens cable to the Auto Iris Lens Connector on the camera when the Auto Iris Lens is used.

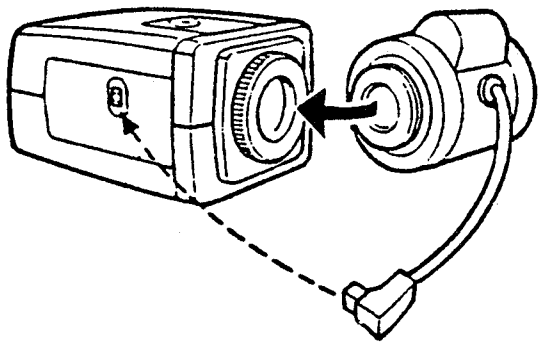
(3) Set the Lens Selection Switch (6) to the proper position as follows.

DC:

The mounted lens is one of the listed on page 11 or the one requires the DC control signal for auto iris control.

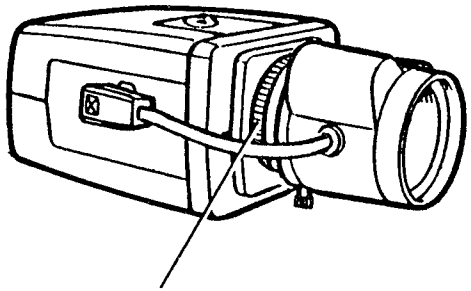
VIDEO:

The mounted lens requires video signal for auto iris control.



FLANGE-BACK OR FOCUS ADJUSTMENT

1. Loosen the screw on the Flange-back Adjusting Ring.



Flange-back Adjusting Ring

2. Turn the Flange-back Adjusting Ring to the desired position.

CAUTION:

Do not turn this ring counterclockwise too much as this could damage the inner glass and CCD image sensor.

3. Tighten the screw on the Flange-back Adjusting Ring tenderly (less than 0.5kg.cm of torque).

SPECIFICATIONS

Pick-up Device:	1/2-inch, integral colour filter, interline CCD image sensor with 512(H) x 582(V) pixels
Scanning System:	625 lines/50 fields/25 frames, 2:1 interlace
Horizontal Scanning Frequency:	15.625 kHz
Vertical Scanning Frequency:	50 Hz
Horizontal Resolution:	330 lines at center (Typical)
Signal to Noise Ratio:	44 dB (Luminance, AGC OFF)
Minimum Scene Illumination:	10 lux at F1.4 with AGC ON
Recommended Scene Illumination:	150 lux at F1.4
White Balance:	Selectable AUTO (Through-The-Lens (TTL) Auto Tracing White Balance (ATW) or LOCK (AWC: Auto White Balance Setting Control)
Automatic Gain Control:	Selectable ON or OFF
Lens Selection:	Selectable DC (DC control type) or VIDEO (Video signal control type)
Lens Mount:	Special C-mount (CS-mount)
Maximum Cable Length:	200m with RG-59/U (3C-2V) (Less than 30 ohms/1000 ft. of DC resistance of inner conductor) 500m with RG-6/U (5C-2V) (Less than 12 ohms/1000 ft. of DC resistance of inner conductor)
Power Supply:	To be supplied from the specified monitor, camera extension unit or camera drive unit. (Approx. 350 mA DC constant current)
Ambient Operating Temperature:	-10°C – +50°C
Dimensions:	74(W) x 58(H) x 112(D) mm
Weight:	0.38 kg

Weight and dimensions indicated are approximate.
Specifications are subject to change without notice.

OPTIONAL ACCESSORIES

• Camera Drive Unit	WV-PS10A, WV-PS104
• Colour Video Monitor	WV-CM110A
• Camera Extension Unit	WV-AD110A
• Auto Panning Head	WV-35A
• Remote Control Unit	WV-32
• Dust Proof Housing	WV-40
• Lens	WV-LA2.8
	WV-LA4.5
	WV-LA6
	WV-LA12
	WV-LA18
	WV-LA36
	WV-LZ81/6
• Lens Mount Converter (C-mount Adaptor)	WV-AD20